

JUL 05 2006

Serial No. 10/613,823

Patent
Attorney Docket No.: PD-203016**REMARKS**

By this amendment, claims 1-3, 5-12, 14-16, 18-26 and 28-33 are pending, in which claims 4, 13, 17 and 27 are canceled without prejudice or disclaimer, and claims 1, 5, 6, 11, 14, 18, 24 and 28 are amended. No new matter is added.

The Office Action mailed April 18, 2006 rejected claims 1-10 and 13-33 under 35 U.S.C. § 102 as anticipated by *Echard et al.* ("The π -Rotation Low-Density Parity Check Codes," IEEE, 29 Nov. 2001). Also, the Office Action rejected the pending claims under the judicially created doctrine of obviousness-type double patenting. Further, claim 13, was rejected under 35 U.S.C. § 101 as claiming nonstatutory subject matter.

Applicants appreciate the indication that claims 11 and 12 are allowable if rewritten in independent form.

The present amendment is believed to render the double patenting rejection and the § 101 rejection moot.

To expedite prosecution, Applicants have amended independent claim 1 to include the features of dependent claim 4 (now canceled). Amended claim 1 recites "wherein the first information bit in the j^{th} group of M information bits is accumulated in the j^{th} parity bit accumulator if the j^{th} entry in $(jM)^{\text{th}}$ column of the parity check matrix is 1, where $j=0,1,2,3,\dots,k_{ldpc}/M-1$, wherein the remaining $(M-1)$ information bits $m=jM+1, jM+2, jM+3,\dots,(j+1)M-1$ of the j^{th} group is accumulated in the parity bit accumulators according to $\{x + m \bmod M \times q\} \bmod (n_{ldpc} - k_{ldpc})$, wherein x denotes the address of the parity bit accumulator corresponding to the first bit, jM , in the group, and q is a code rate dependent constant, wherein after all of the information bits are exhausted, operations, starting with $i = 1$ are performed according to $p_i = p_i \oplus p_{i-1}$, $i = 1, 2, \dots, n_{ldpc} - k_{ldpc} - 1$, wherein final content of p_i , $i = 0, 1, \dots, n_{ldpc} - k_{ldpc} - 1$ is equal to the parity bit p_i ." Likewise, claim 14, as amended, now

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includes the features of 17. Also, independent claim 24 has been amended to incorporate the features of claim 27. Further, claim 11 has been recast in independent form.

The Office Action provides no explanation on how the specific features of dependent claims 4, 17 and 27 are satisfied by *Echard et al.* A thorough study of the references reveals no mention of the use of a parity bit accumulator, much less one that accumulates according to $\{x + m \bmod M \times q\} \bmod (n_{ldpc} - k_{ldpc})$. Instead, *Echard et al.* is concerned with defining LPDC codes using a single permutation vector (i.e., π -rotation). An encoding circuit, such as FIG. 6, is utilized that reflects the parity check matrix, H^d ; this circuit operates without the need for manipulating addresses.

As anticipation under 35 U.S.C. § 102 requires that each and every element of the claim be disclosed in a prior art reference, based on the foregoing, it is clear that *Echard et al.* fails to disclose the claimed features of "wherein the first information bit in the j^{th} group of M information bits is accumulated in the j^{th} parity bit accumulator if the j^{th} entry in $(jM)^{\text{th}}$ column of the parity check matrix is 1, where $j=0,1,2,3,\dots,k_{ldpc}/M-1$, wherein the remaining $(M-1)$ information bits $m=jM+1, jM+2, jM+3,\dots,(j+1)M-1$ of the j^{th} group is accumulated in the parity bit accumulators according to $\{x + m \bmod M \times q\} \bmod (n_{ldpc} - k_{ldpc})$, wherein x denotes the address of the parity bit accumulator corresponding to the first bit, jM , in the group, and q is a code rate dependent constant, wherein after all of the information bits are exhausted, operations, starting with $i = 1$ are performed according to $p_i = p_i \oplus p_{i-1}$, $i = 1, 2, \dots, n_{ldpc} - k_{ldpc} - 1$, wherein final content of p_i , $i = 0, 1, \dots, n_{ldpc} - k_{ldpc} - 1$ is equal to the parity bit p_i ."

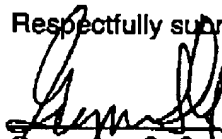
Therefore, the present application, as amended, overcomes the rejections of record and is in condition for allowance. Favorable consideration of this application is respectfully requested. If any unresolved issues remain, it is respectfully requested that the Examiner telephone the undersigned attorney at (310) 964-4615 so that such issues may be resolved as

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expeditiously as possible. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



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